UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,546	10/28/2003	Martin R. Watts	JPM-057 C1	7838

70813   7590   01/22/2008
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EXAMINER
KHATTAR, RAJESH

ART UNIT	PAPER NUMBER
3693	

NOTIFICATION DATE	DELIVERY MODE
01/22/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/696,546	WATTS ET AL.
	Examiner	**Art Unit**	
	Rajesh Khattar	3693	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 October 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-8</u> is/are pending in the application.

    4a) Of the above claim(s) <u>1</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>2-8</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/ are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Acknowledgements

This Office Action is in response to Applicant's communication filed on Oct. 28, 2003. Preliminary amendment dated 2/10/2004 has been entered. Claim 1 has been cancelled. Claims 2 and 3 have been amended. New claims 4-8 have been added. As such, claims 2-8 are pending in the application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2, 4 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The "q-model" has not been described with any specificity.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Examiner is unclear about the term "employing a volatility premium process" in the 6th limitation. Particularly, Examiner is unclear as to what active steps are associated with the volatility premium process.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Daughtery, US Patent No. 6,263,321 in view of a book by Neil A. Chriss titled "Black-

Scholes and Beyond. Option Pricing Models" in view of a non-patent literature titled

Financial Engineering News and further in view of Official Notice. Daughtery discloses

a method for generating a premium for an option, comprising:

providing the average volatility of the asset by employing historical or market

data (Abstract; col. 1, lines 20-27; col. 4, lines 6-20; col.5, lines 57-63; col. 7, lines 1-8);

providing the *volatility of volatility* of the asset by employing historical data (col. 4,

lines 6-20; col. 7, lines 1-8; col. 11, lines 45-48);

providing the type of distribution for the forward rate based on historical data (col.

7, lines 1-7, distribution of points within the standard deviation calculation; col. 9, lines

37-40; Examiner interprets this limitation to be simply extrapolation of the historical

data);

providing a volatility distribution *graph* based on the selected distribution type

(col. 4, lines 6-20), *the volatility and the volatility of volatility, the graph having volatility*

as the x-axis and probability as the y-axis;

dividing the volatility distribution graph into a plurality of vertical slices, each of

said slices corresponding to a volatility, whereby the integration of the graph over the

volatility range corresponding to each slice provides a probability for the corresponding

volatility (col. 11, lines 34-60; where the discrete summation can be converted to the

continuous integral case);

determining an option premium for each vertical slice by employing a volatility

premium process (col. 11, lines 35-col. 12, lines 13);

weighing each premium from said determining of premium step by the probability

associated with the corresponding volatility as determined from the volatility distribution

graph (col. 11, lines 45-48; Examiner notes that this step simply involves obtaining the

weighted premium from the graph);

summing all weighed premiums associated with the volatilities to provide a

premium for the option (intended/expected outcome).

Daughtery does not specifically disclose volatility of volatility. Examiner

recognizes that this term is old and well known in the art. To add further support,

Examiner cites Chriss disclosing this feature (pages 343-349). Therefore, it would have

been obvious for a person having ordinary skills in the art at the time the invention was

made to modify the disclosure of Daughtery to include the disclosure of Chriss. One

would have been motivated to do so in order to address the randomly changing volatility

as illustrated by Chriss (page 345).

Daughtery and Chriss do not specifically disclose performing an inverse Black

procedure to determine the conventional market implied volatility for a strike rate that is

different from the forward rate. Examiner recognizes this limitation to be old and well known in the art. It is Examiner's interpretation that Applicant recognizes this as well (specification page 5, lines 5-7). However, to add further support, Examiner cites Financial Engineering News disclosing this feature. Therefore, it would have been obvious for a person having ordinary skills in the art at the time the invention was made to modify the disclosure of Daughtery and Chriss to include the disclosure of Financial Engineering News. One would have been motivated to do so in order to yield smooth volatility surfaces as illustrated by Financial Engineering News.

Examiner notes that the limitation citing graph having volatility as the x-axis and probability as the y-axis, dividing the volatility distribution graph into a plurality of vertical slices followed by integration of the graph is old and well known in the art. Examiner interprets dividing the graph into a plurality of vertical slices followed by integration to be simply creating gridlines on the graph which is within the capability of a typical spreadsheet program, e.g. Excel. Examiner, therefore, takes Official Notice that these limitations are old and well known in the art. Therefore, it would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the disclosure of Daughtery, Chriss and Financial Engineering News to include the disclosure of Official Notice. One would have been motivated to do so in order to plot the data for analysis.

Claim 6 is substantially similar to claim 3 and hence rejected on similar ground.

Claims 2, 4, 5, 7 and 8 have not been examined due to the pending 37 CFR 1.105 request (see attached). These claims will be examined once the Applicant

responds to the request. Examiner would like to point out that non-rejection of claims 2, 4, 5, 7 and 8 in this office action should not be viewed as allowability of claims 2, 4, 5, 7 and 8.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rajesh Khattar whose telephone number is 571-272-7981. The examiner can normally be reached on Flex schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Kramer can be reached on 571-272-6783. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.
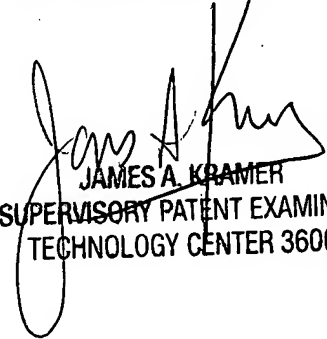
RK
Jan. 16, 2008

Request for Information

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

Examiner has reviewed the claims and would like to know where, specifically, the mathematical equation presented in claims 2, 4 and 7 came from. Specifically, Examiner requests that the Applicant provide references to textbook(s), publication(s), etc. where the equation of claims 2, 4 and 7 can be found.

The fee and certification requirements of 37 CFR 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR 1.105 that are included in the applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR 1.97.

RK
Jan. 16, 2008

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